

A NEW SPINNING MITE ATTACKING RASPBERRY IN MICHIGAN.

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During the past few years, at various times Prof. R. H. Pettit of Michigan State College has sent to the writer specimens of mites attacking raspberry in southwestern Michigan. Two species have been involved, a Paratetranychus and a Tetranychus. The latter proves to be new to science, and is herein described.

Tetranychus medanieli, new species.

Female.—General body color deep amber, with blackish spots distributed chiefly around body margin; legs about same color as body. A single pale eye cornea on each side, behind and outward of subfrontal bristles. Body oval, in length averaging 0.40 mm.; width, averaging 0.24 mm. Dorsal body setae 26, pale, roughly in four rows. Mandibular plate rounded anteriorly with no noticeable emargination. "Thumb" of palpus fully as wide as long, bearing at its tip a strong "finger" whose base is nearly half the width of "thumb" at tip; on its upper distal corner are two pin-shaped pseudo-fingers; on upper side hardly midway to base is a "finger" or sensilla much smaller than terminal "finger," and between this and base are two strong setae somewhat exceeding the sub-basal "finger"; a strong hair arises latero-ventrally half way from tip to base of "thumb." Claw on the penultimate joint of palpus less hooked than usual, hardly reaching subbasal "finger." The forelegs are about three-fourths the length of the body. Femur about three times as long as thick, just equalling the tarsus; tibia about one-fifth longer than petella, which is nearly twice as long as trochanter. Relative lengths of joints as follows: Coxa, $21 \pm$; trochanter, 11; femur, 35; patella, 19; tibia, 23; tarsus, 35. Tip of tarsus bearing a claw which is bent downward at about right angles at a point one-quarter outward from base; basal portion unclawed, but distal portion made up of six component, subequal, straightish spurs. The usual series of four tenent hairs arise in pairs by the side of the claw base. The collar trachea is of the orthodox Tetranychus type, in the shape of a U with one long and one short arm.

Male.—Body more wedge-shaped than female, in length much smaller; legs proportionately longer. Penis with inner lobe probably rod-like (extremely difficult to observe); basilar lobe rudimentary; shaft about twice as long as its basal thickness, bent abruptly upward and forward about 330° from axis of main shaft, then bent sharply backward as a sickle-shaped acuminate point, the distal portion thus forming a double or S-shaped hook.

Type slide.—Cat. No. 1029, U. S. N. M.

The type material is from Bridgman, Michigan, June 19, 1930, from cultivated raspberry foliage, Lot 1533, Sub. 49, Dept. of Entomology, Michigan State College. The same species has been received from the same host from Byron Creek, Michigan

(Lot 1533, Sub. 50). Professor Pettit informs me that the mite appears at berry-picking time during dry seasons and that the epidemics are so severe as nearly to wipe out the raspberry crop in southwestern Michigan. Since the raspberry crop is attacked during ripening time, it is impractical to apply insecticides to the crop at this time. Professor Pettit describes the damage as follows: "The leaves turn brown, curl somewhat, and during the latter part of the picking season the fruit fails to develop properly. The new growth is webbed together, the leaves being bound together by silken webs. The mites work on both the under and upper surfaces of the leaves." Professor Pettit states that the damage amounts to many thousands of dollars during epidemics and that the pest has been reported for 10 or 12 years. The mites usually disappear soon after the crop is harvested.

The present species is possibly closest to *T. bimaculatus* Harv., from which it may be distinguished as follows:

T. bimaculatus. Female: Color usually brick or ferruginous red; mandibular plate with slight median anterior notch; femur noticeably exceeding tarsus. Male: Penis with strongly developed basilar lobe, shaft bent upward at about 90°, ending in a very blunt barb.

T. mcdanieli. Female: Color usually deep amber; mandibular plate with no anterior emargination; femur equalling tarsus. Male: Penis with almost no basilar lobe, shaft bent upward and forward about 330° from axis of shaft, then bent sharply backward as a sickle-shaped acuminate point, the distal portion thus forming an S-shaped hook.

The Paratetranychus, also occurring on raspberry in Michigan, appears to be *P. ilicis* McGregor. This species was originally described from holly (*Ilex opaca*) from South Carolina.

EXPLANATION OF PLATE.

Tetranychus mcdanieli.

Fig. 1. Tip of tarsus showing appendages (viewed laterally).

Fig. 2. Tip of tarsus (viewed ventrally).

Fig. 3. Collar trachea (viewed laterally).

Fig. 4. Distal portion of palpus with terminal appendages (viewed laterally).

Fig. 5. Foreleg (viewed laterally).

Fig. 6. Penis (viewed laterally).

(All drawings made with assistance of camera lucida, using oil-immersion lens for Figs. 1, 2, 3, 4 and 6.)

